

MAXDATA PLATINUM 300 IR M6

User's Manual

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1 Setting up the System

Safety Information

Server Position

Please take note of the following criteria for creating a practical and safe workplace when setting up your computer:



CAUTION

The system can be used anywhere the temperature is suitable for people. However, rooms with humidity over 70%, and dusty or dirty areas are not appropriate. In addition, do not expose the server to any temperatures over +30°C or under +10°C.



CAUTION

For proper cooling and airflow, operate the system only with the chassis covers installed.



CAUTION

Make sure that the cables connecting the server to peripheral devices are not tight.



CAUTION

Make sure that all power and connection cables are positioned so that they are not trip hazards.



CAUTION

When you save data to your server's hard disks or to a floppy disk, they are stored as magnetic information on the media. Make sure that they are not damaged by magnetic or electromagnetic fields.



CAUTION

Because the electronics in your computer can be damaged by jarring, no mechanical devices should be placed on the same surface as the server. This is especially important for impact printers whose vibrations could damage the hard disk.



CAUTION

Hazardous conditions, devices and cables: Hazardous electrical conditions may be present on power, telephone, and communication cables. Turn off the server and disconnect the power cord, telecommunications systems, networks, and modems attached to the server before opening it. Otherwise, personal injury or equipment damage can result.



CAUTION

Electrostatic discharge (ESD) and ESD protection: ESD can damage disk drives, boards, and other parts. We recommend that you perform all procedures in chapter 3 only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground - any unpainted metal surface - on your server when handling parts.



ATTENTION

In order to fully separate the server from current, the power cord must be removed from the wall outlet.

System Access Warnings



CAUTION

To avoid personal injury or property damage, the following safety instructions apply whenever accessing the inside of the product:

- Turn off all peripheral devices connected to this product.
- Turn off the system by pressing the power button to off.
- Disconnect the AC power by unplugging all AC power cords from the system or wall outlet.
- Disconnect all cables and telecommunication lines that are connected to the system.
- Retain all screws or other fasteners when removing access cover(s). Upon completion of accessing inside the product, refasten access cover with original screws or fasteners.
- Do not access the inside of the power supply. There are no serviceable parts in the power supply. Return to manufacturer for servicing.
- Power down the server and disconnect all power cords before adding or replacing any non hot-plug component.
- When replacing a hot-plug power supply, unplug the power cord to the power supply being replaced before removing the power supply from the server.



CAUTION

If the server has been running, any installed processor(s) and heat sink(s) may be hot. Unless you are adding or removing a hot-plug component, allow the system to cool before opening the covers. To avoid the possibility of coming into contact with hot component(s) during a hotplug installation, be careful when removing or installing the hot-plug component(s).



CAUTION

To avoid injury do not contact moving fan blades. If your system is supplied with a guard over the fan, do not operate the system without the fan guard in place.

Rack Mount Warnings

The equipment rack must be anchored to an unmovable support to prevent it from tipping when a server or piece of equipment is extended from it. The equipment rack must be installed according to the rack manufacturer's instructions.

Install equipment in the rack from the bottom up, with the heaviest equipment at the bottom of the rack.

Extend only one piece of equipment from the rack at a time.

You are responsible for installing a main power disconnect for the entire rack unit. This main disconnect must be readily accessible, and it must be labeled as controlling power to the entire unit, not just to the server(s).

To avoid risk of potential electric shock, a proper safety ground must be implemented for the rack and each piece of equipment installed in it.

Powering up the System

At the front of the case, you can find the necessary controls like power button, reset button and the HDD LEDs. Press the power button one time briefly in order to boot the server.

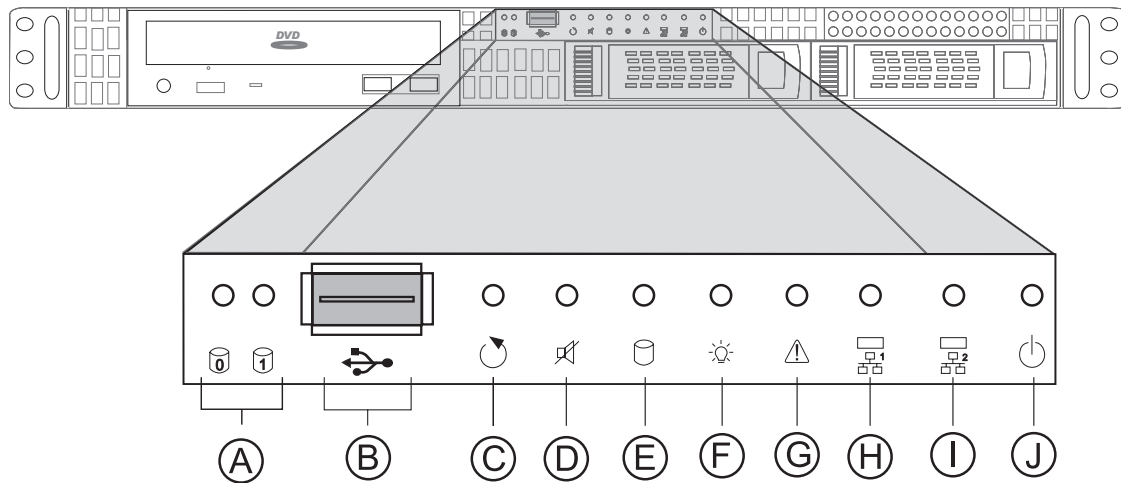


Figure 1. Front View

- | | |
|-----------------------------------|------------------------------|
| A. HDDTray Activity LEDs | F. Power LED |
| B. USB 2.0 Port | G. Failure LED |
| C. Reset Button | H. NIC Activity LED 1 |
| D. Fan Alarm Mute Button | I. NIC Activity LED 2 |
| E. System HDD Activity LED | J. Power Button |

2 Board Features

This chapter briefly describes the main features of the mainboard.

Table 1 summarizes the major features of the board.

Table 1. Feature Summary

Feature	Description
Processor	• Support for one Intel® Pentium® D, Pentium® 4 or Celeron® D processor in the LGA775 package • Supports Intel® Dual Core Architecture • Supports Intel® Hyper-Threading Technology • Supports Intel® Extended Memory System 64 Technology (EM64T)
Memory	• 4 DIMM sockets supporting 400/533/667 MHz DDR2 DIMMs • Data bandwidth per channel of 4.2 GB/s or 8.4 GB/s in dual channel when using DDR2 667 MHz • Support for up to two DDR2 channels for a total of 4 DIMMs (2 DIMMs / Channel) providing up to 8 GB max memory capacity
Intel® E7230 Chipset Components	• Intel® E7230 MCH Memory Controller Hub • Intel® ICH7R I/O controller • 12-deep In-Order Queue
I/O Control	Super I/O: SMsC* LP47M182NR External connections: • Stacked PS2 Keyboard/Mouse connections • RJ45 Serial B port • Two RJ45 NIC connectors for 10/100/1000 Mbps connections • Two USB 2.0 ports Internal connections: • One USB port header which supports two USB 2.0 ports • One DH10 Serial A header • Two SATA-150 connectors with integrated RAID 0/1 support • One ATA-100 connector • SSI-compliant 34-pin control panel header
Video	Integrated stand-alone ATI ES1000 graphics engine that supports standard SVGA drivers with analog display capabilities. The graphics subsystem has 16 MB of dedicated memory to support the onboard video controller
Board I/O Subsystem	Five independent PCI Buses: • Segment A - Two PCI 32-bit/33-MHz 3.3 V Universal connectors supporting full length PCI add-in cards (Adapters which support 5 V only are not supported) and one embedded Intel® 10/100/ 1000 82541PI gigabit Ethernet Controller (Supports PCI Specification, Rev 2.3) • Segment B - One x1 PCI Express resource implemented as a single x4 PCI Express connector supporting x1/x2/x4 PCI Express add-in cards • Segment C - One x1 PCI Express resource implemented as an embedded Intel® 10/100/1000 82573E gigabit Ethernet Controller • Segment D - One x4 PCI Express resource implemented as a single x8 PCI Express connector supporting x1/x2/x4/x8 PCI Express add-in cards • Segment E - One x8 PCI Express resource implemented as a single x8 PCI Express connector supporting x1/x2/x4/x8 PCI Express add-in cards

Table 1. Feature Summary (continued)

Feature	Description
Hard drive	• Ultra ATA100 support: One IDE channel capable of supporting up to two drives. • SATA support: Four independent SATA ports support data transfer rates up to 1.5 Gb/s (150 MB/s) per port
Fans	• Two general purpose 3-pin fan headers • Two general purpose 4-pin fan headers • One 4-pin processor fan header

Connector and Header Locations

Figure 2 shows the approximate location of the major components on board.

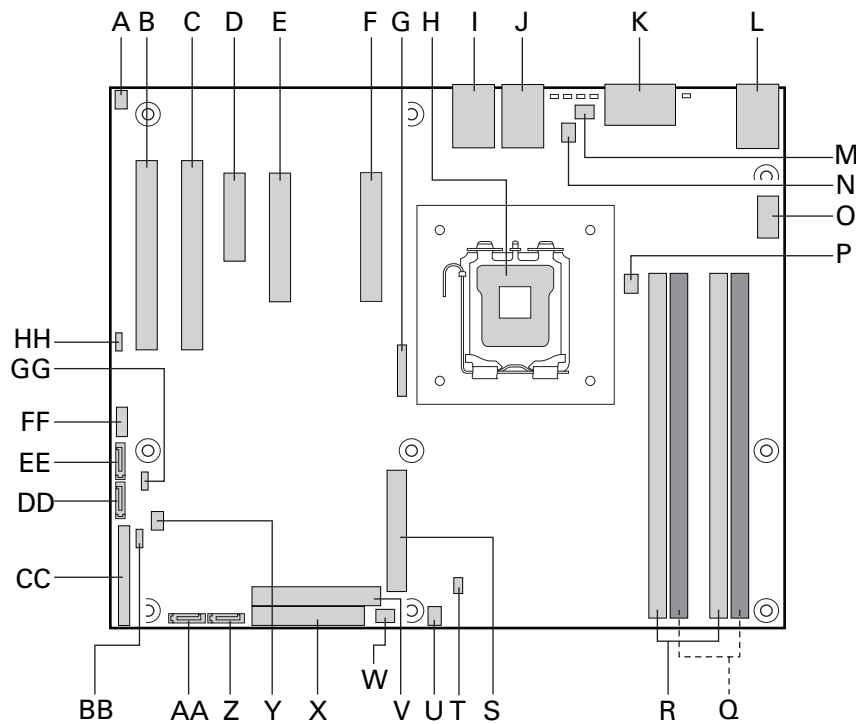


Figure 2. Board Connector and Component Locations

Table 2. Board Connectors and Components

Label	Description	Label	Description
A.	Intrusion Header	R.	Memory Bank 1
B.	PCI (32bit/33MHz) Slot 1	S.	Main Power
C.	PCI (32bit/33MHz) Slot 2	T.	Hardware Management Controller
D.	PCI Express* x4 (x1 Lane) Slot 3	U.	SysFan4
E.	PCI Express* x8 (x4 Lane) Slot 4	V.	PATA IDE Connector
F.	PCI Express* x8 (x8 Lane) Slot 5	W.	SysFan3
G.	Battery	X.	Floppy Connector
H.	Processor Socket	Y.	SCSI LED Connector
I.	NIC1 and USB1-2	Z.	SATA Port 3
J.	NIC2	AA.	SATA Port 2
K.	Serial A and Video Port	BB.	Clear CMOS Jumper
L.	PS2 Stacked Mouse/Keyboard	CC.	Front Panel Connector
M.	SysFan1	DD.	SATA Port 1
N.	SysFan2	EE.	SATA Port 0
O.	2x4 Processor Power	FF.	External USB Connector
P.	Processor Fan	GG.	CMOS Config Jumper
Q.	Memory Bank 2	HH.	HSBP Connector

Configuration Jumpers

Figure 3 shows the location of the configuration jumpers.

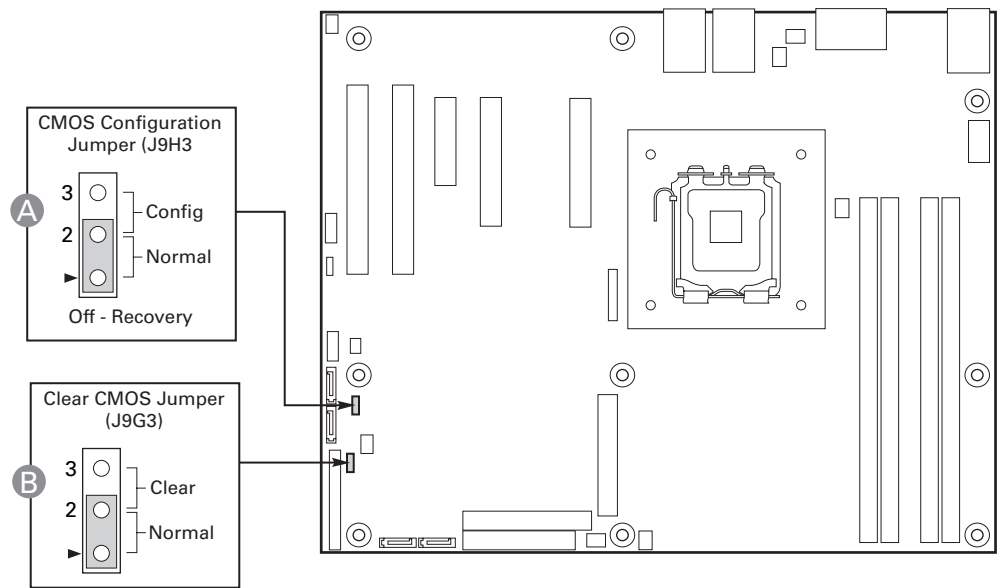


Figure 3. Configuration Jumpers

Table 3. Configuration Jumpers

Jumper Name	What happens at system reset...
CMOS Configuration	Pins 1-2 should be jumpered for normal system operation. If pins 2-3 are jumpered, the system will enter a configuration menu that is only available by jumpering these pins. These pins should NOT be jumpered for normal operation. If the jumper is removed, the system will attempt to recover the BIOS by loading the BIOS code into the flash device from a floppy disk. This is typically used when the BIOS has become corrupted. The jumper should NOT be removed for normal operation.
Clear CMOS	Pins 1-2 should be jumpered for normal system operation. If pins 2-3 are jumpered, the CMOS settings will be cleared on the next reset. These pins should NOT be jumpered for normal operation.

Back Panel Connectors

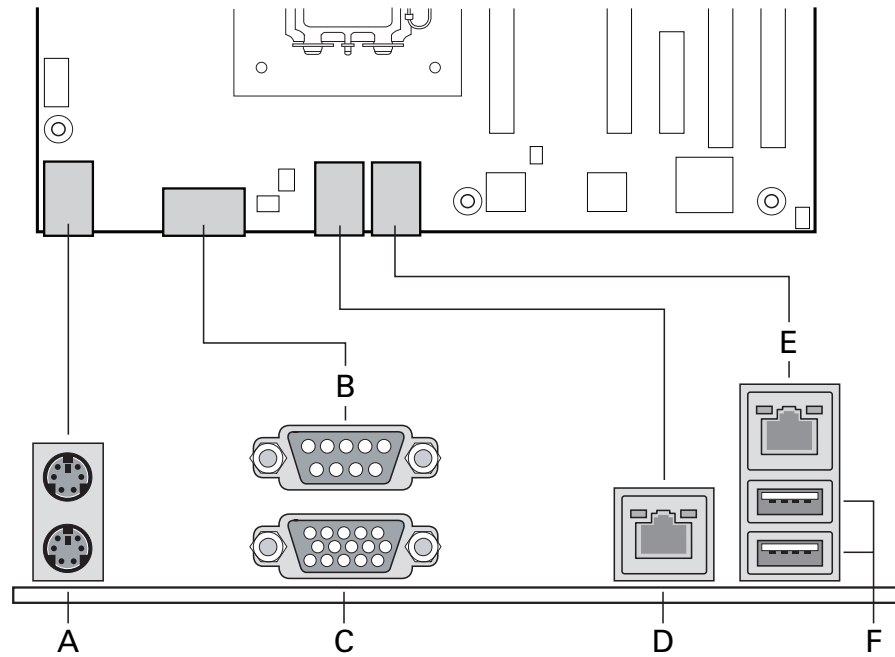


Figure 4. Back panel Connectors

Table 4. Back panel Connectors

Label	Description	Label	Description
A.	Stacked PS2 Mouse/Keyboard Ports	D.	NIC2 (10/100/1000 Mbps)
B.	Serial A	E.	NIC1 (10/100/1000 Mbps)
C.	Video	F.	USB1-2

The NIC LEDs at the right and left of each NIC provide the following information:

Table 5. NIC LEDs

LED	LED State	Description
Left	Off	No network connection
	Solid Amber	Network connection in place
	Blinking Amber	Transmit/receive activity
Right	Off	10 Mbps connection (if left LED is on or blinking)
	Solid Amber	100 Mbps connection
	Solid Green	1000 Mbps connection

Hardware Requirements

To avoid integration difficulties and possible board damage, your system must meet the requirements outlined below.

Memory

The Server Board provides four DIMM sockets across two channels, Channel A and Channel B. Channel A consists of DIMM sockets 1A and 2A. Channel B consists of DIMM sockets 1B and 2B.

A minimum of one 256 MB DIMM is required in DIMM socket 1A. This uses single-channel interleave. However, for dual-channel interleave, providing optimum performance, a minimum of two DIMMs should be installed in DIMM sockets 1A and 1B. Except for the option of installing a single DIMM in socket 1A or 1B, DIMMs must be installed in pairs and populated as follows:

- DIMM1A and DIMM 1B: Populate these two sockets together first.
- DIMM 2A and DIMM 2B: Populate these sockets in addition to DIMM 1A and DIMM 1B if four DIMMs are to be used.

DIMMs must meet the following requirements:

- DDR2 400/533/667, un-buffered, DDR2 DIMM modules
- DIMM organization: x72 ECC or x64 Non-ECC
- Pin count: 240
- DIMM capacity: 256 MB, 512 MB, 1 GB, and 2 GB DIMMs
- Serial PD: JEDEC Rev 2.0
- Serial PD: JEDEC Rev 2.0
- Interface: SSTL2

In order to operate in Dual Channel Dynamic Paging Mode, the following conditions must be met:

- Two identical DIMMs are installed, one each in DIMM_1A and DIMM_1B
- Four identical DIMMs are installed (one in each socket location)

Installing only 3 DIMMs is not supported. Do not use DIMMs that are not “matched” (same type and speed). Use of identical memory parts is always the preferred method.

3 Hardware Installations and Upgrades

Before You Begin

Before working with your server product, pay close attention to the “Safety Information” at the beginning of this manual.

Tools and Supplies Needed

- Phillips (cross head) screwdriver (#1 bit and #2 bit)
- Needle nosed pliers
- Antistatic wrist strap and conductive foam pad (recommended)

Installing and Removing Memory

The silkscreen on the board for the DIMMs displays DIMM_2B, DIMM_1B, DIMM_2A, DIMM_1A starting from the edge of the board. DIMM_1A is the socket closest to the processor socket. See „Memory” for a discussion of the memory requirements and options.

Installing DIMMs

To install DIMMs, follow these steps:

1. Observe the safety and ESD precautions in “Safety Information”.
2. Turn off all peripheral devices connected to the server. Turn off the server.
3. Disconnect the AC power cord from the server.
4. Remove the server’s cover.
5. Locate the DIMM sockets (see Figure 5).

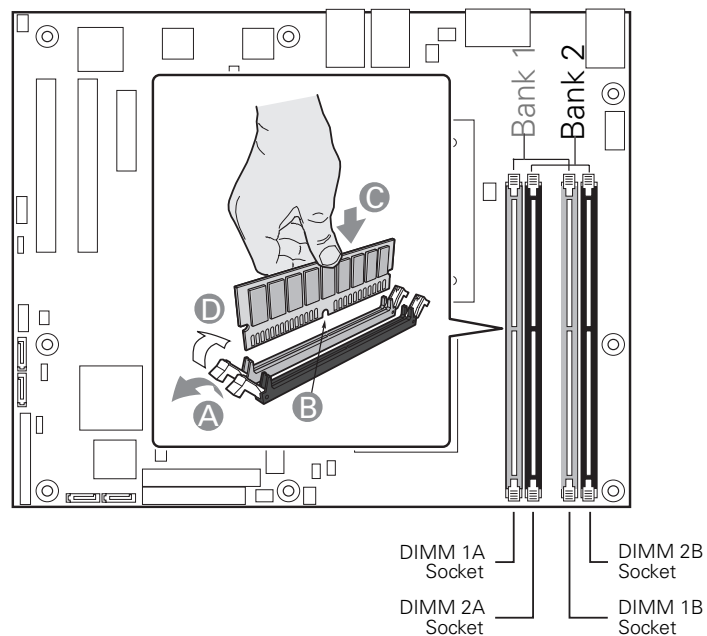


Figure 5. Installing DIMMs

6. Make sure the clips at either end of the DIMM socket(s) are pushed outward to the open position (see letter "A" in Figure 5).
7. Holding the DIMM by the edges, remove it from its anti-static package.
8. Position the DIMM above the socket. Align the notch on the bottom edge of the DIMM with the key in the DIMM socket (see letter "B" in Figure 5).
9. Insert the bottom edge of the DIMM into the socket (see letter "C" in Figure 5).
10. When the DIMM is inserted, push down on the top edge of the DIMM until the retaining clips snap into place. Make sure the clips are firmly in place (see letter "D" in Figure 5).
11. Replace the server's cover and reconnect the AC power cord.

Replacing the Backup Battery

The lithium battery on the server board powers the RTC for up to 10 years in the absence of power. When the battery starts to weaken, it loses voltage, and the server settings stored in CMOS RAM in the RTC (for example, the date and time) may be wrong. Contact your customer service representative or dealer for a list of approved devices.



WARNING

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.



WARNUNG

Wenn eine ungeeignete Batterie eingesetzt wird oder die Batterie falsch eingesetzt wird, besteht Explosionsgefahr. Ersetzen Sie verbrauchte Batterien nur durch Batterien gleichen oder äquivalenten Typs, der vom Hersteller empfohlen wurde. Entsorgen Sie die verbrauchte Batterie entsprechend den Anweisungen des Herstellers.



AVERTISSEMENT

Danger d'explosion en cas de remplacement incorrect de la pile. Remplacez-la uniquement par une pile du même type ou d'un type équivalent recommandé par le fabricant. Mettez au rebut les piles usagées en vous conformant aux instructions du fabricant.



OSTRZEŻENIE

Nieprawidłowa wymiana baterii grozi eksplozją. Wymieniać tylko na taki sam lub równoważny typ, zalecany przez producenta. Zużyte baterie utylizować zgodnie z instrukcjami producenta.



ADVARSEL

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.



ADVARSEL

Lithiumbatteri - Eksplosjonsfare. Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten. Brukt batteri returneres apparatleverandøren.



VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.



VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

To replace the battery, follow these steps:

1. Observe the safety and ESD precautions in “Safety Information”.
2. Turn off all peripheral devices connected to the server. Turn off the server.
3. Disconnect the AC power cord from the server.
4. Remove the server’s cover and locate the battery.
5. Lift the battery retention mechanism (see Figure 6).
6. Remove the battery from its socket.

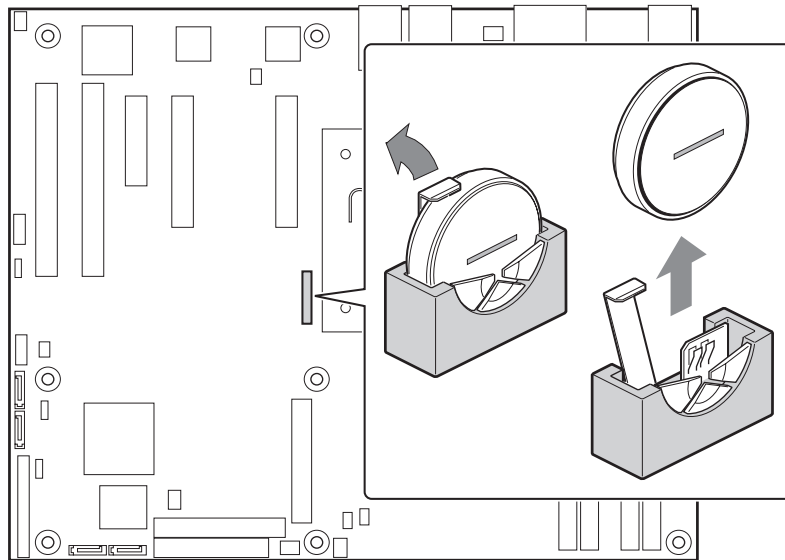


Figure 6. Removing the Battery

7. Dispose of the battery according to local ordinance.
8. Remove the new lithium battery from its package, and, being careful to observe the correct polarity, insert it in the battery socket.
9. Close the chassis.
10. Run Setup to restore the configuration settings to the RTC.

4 Server Utilities

Using the BIOS Setup Utility

This section describes the BIOS Setup Utility options, which is used to change server configuration defaults. You can run BIOS Setup with or without an operating system being present.

Starting Setup

You can enter and start BIOS Setup under several conditions:

- When you turn on the server, after POST completes the memory test
- When you have moved the CMOS jumper on the server board to the “Clear CMOS” position (enabled)

In the two conditions listed above, during the Power On Self Test (POST), you will see this prompt:

```
Press <F2> to enter SETUP
```

In a third condition, when CMOS/NVRAM has been corrupted, you will see other prompts but not the <F2> prompt:

```
Warning: CMOS checksum invalid
```

```
Warning: CMOS time and date not set
```

In this condition, the BIOS will load default values for CMOS and attempt to boot.

If You Cannot Access Setup

If you are not able to access BIOS Setup, you might need to clear the CMOS memory. For instructions on clearing the CMOS, see “Clearing the CMOS”.

Setup Menus

Each BIOS Setup menu page contains a number of features. Except for those features that are provided only to display automatically configured information, each feature is associated with a value field that contains user-selectable parameters. These parameters can be changed if the user has adequate security rights. If a value cannot be changed for any reason, the feature’s value field is inaccessible.

Table 6 describes the keyboard commands you can use in the BIOS Setup menus.

Table 6. Keyboard Commands

Press	Description
<F1>	Help - Pressing F1 on any menu invokes the general Help window.
← →	The left and right arrow keys are used to move between the major menu pages. The keys have no effect if a sub menu or pick list is displayed.
↑	Select Item up - The up arrow is used to select the previous value in a menu item's option list, or a value field pick list. Pressing the Enter key activates the selected item.
↓	Select Item down - The down arrow is used to select the next value in a menu item's option list, or a value field pick list. Pressing the Enter key activates the selected item.
F5/-	Change Value - The minus key or the F5 function key is used to change the value of the current item to the previous value. This key scrolls through the values in the associated pick list without displaying the full list.
F6/+	Change Value - The plus key or the F6 function key is used to change the value of the current menu item to the next value. This key scrolls through the values in the associated pick list without displaying the full list. On 106-key Japanese keyboards, the plus key has a different scan code than the plus key on the other keyboard, but it has the same effect.
<Enter>	Execute Command - The Enter key is used to activate submenus when the selected feature is a sub menu, or to display a pick list if a selected feature has a value field, or to select a sub-field for multi-valued features like time and date. If a pick list is displayed, the Enter key will undo the pick list, and allow another selection in the parent menu.
<Esc>	Exit - The ESC key provides a mechanism for backing out of any field. This key will undo the pressing of the Enter key. When the ESC key is pressed while editing any field or selecting features of a menu, the parent menu is re-entered. When the ESC key is pressed in any sub menu, the parent menu is re-entered. When the ESC key is pressed in any major menu, the exit confirmation window is displayed and the user is asked whether changes can be discarded.
<F9>	Setup Defaults - Pressing F9 causes the following to appear: Setup Confirmation Load default configuration now? [Yes] [No] If "Yes" is selected and the Enter key is pressed, all Setup fields are set to their default values. If "No" is selected and the Enter key is pressed, or if the ESC key is pressed, the user is returned to where they were before F9 was pressed without affecting any existing field values.
<F10>	Save and Exit - Pressing F10 causes the following message to appear: Setup Confirmation Save Configuration changes and exit now? [Yes] [No] If "Yes" is selected and the Enter key is pressed, all changes are saved and Setup is exited. If "No" is selected and the Enter key is pressed, or the ESC key is pressed, the user is returned to where they were before F10 was pressed without affecting any existing values.

Enter Boot Options Menu

When starting the server press F10 to enter the boot options menu after POST completes the memory test.

The boot options menu allows you to select a boot device independent of the boot order set in the BIOS.

This selection only affects the current boot process.

Clearing the CMOS

If you are not able to access the BIOS setup screens, the CMOS Clear jumper will need to be used to reset the configuration RAM.

1. Power down the system and disconnect the AC power.
2. Open the server.
3. Move the jumper from the normal operation position, at pins 1 and 2 to the CMOS Clear position, covering pins 2 and 3 as indicated in the following diagram.

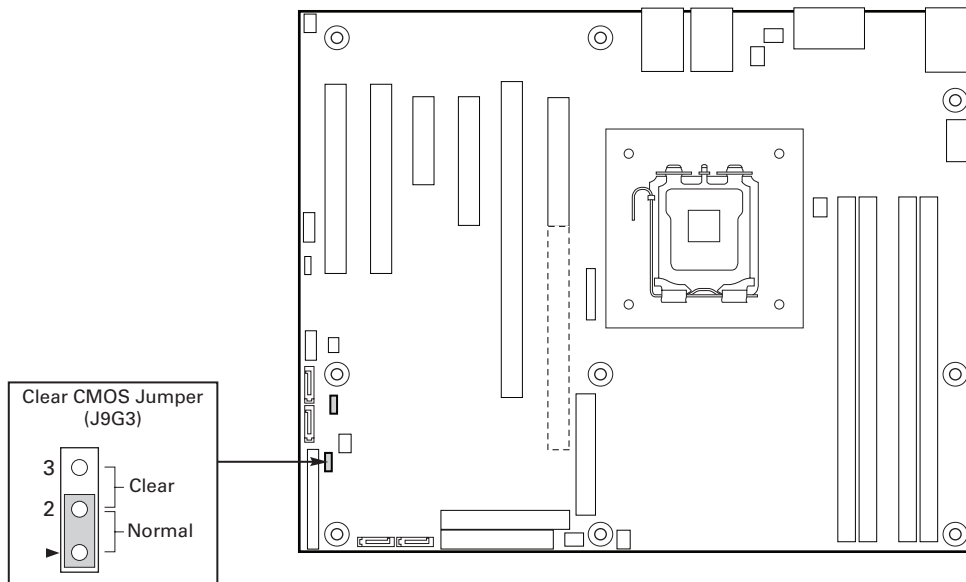


Figure 7. Clearing the CMOS

4. Reconnect the AC power, power up the system.
5. When the system begins beeping, power it down and disconnect the AC power.
6. Return the CMOS Clear jumper to the Normal location, covering pins 1 and 2.
7. Close the server chassis.
8. Reconnect the AC power and power up the system.

Configuring the System for embedded Serial ATA RAID

Configuring the BIOS

1. Make sure you are having at least two SATA hard drives.
2. Enter system BIOS Setup by pressing the <F2> key after the Power-On-Self-Test (POST) memory tests begin.
3. Go to "Advanced" - "Drive Configuration"; ensure "Configure SATA as RAID" is enabled.
4. Then save your settings by pressing <F10>.

Creating your RAID set

1. Upon re-boot you will see the Embedded RAID Option ROM status message on the screen:
`Press <CTRL-E> to enter RAID Configuration Utility`
Then press CTRL-E to enter the RAID Option ROM user interface.
2. In the Management Menu, select option #1: "Configure". "Choose Easy Configuration".
3. Mark ready drives to be used in the RAID array using the space bar and press F10 to end selection.
4. On the "Select Configurable Arrays" screen press <space> and <F10>.
5. Enter the properties of the new RAID: RAID Level, Size, Stripe Size. Accept the settings.
6. Exit the Easy Configuration Screen using <ESC> and save the configuration.
7. Return to the Management Menu and Initialize the new RAID.

Loading the RAID Drivers

1. Begin Microsoft® Windows® Setup by booting from the Microsoft® Windows® installation CD.
2. At the beginning of Microsoft® Windows® Setup, press <F6> to install a third-party SCSI or RAID driver. When prompted, insert the floppy with the RAID driver. Install the SATA RAID Controller driver.
3. Finish the Microsoft® Windows® installation and install all necessary drivers.
4. Install the MegaIDEsp software via the Express Installer CD / Deployment Toolkit CD included with your motherboard or after downloading it from the Internet. This will allow for local monitoring of the RAID configuration.

5 Regulatory and Compliance Information

Product Regulatory Compliance

Product Safety Compliance

The server complies with the following safety requirements:

- EN 60950 (European Union)
- CE – Low Voltage Directive (73/23/EEC) (European Union)

Product EMC Compliance

The server has been tested and verified to comply with the following electromagnetic compatibility (EMC) regulations:

- EN 55022 (Class A) – Radiated & Conducted Emissions (European Union)
- EN 55024 (Immunity) (European Union)
- CE – EMC Directive (89/336/EEC) (European Union)

Product Regulatory Compliance Markings

This product is marked with the following Product Certification Markings:

Table 7. Product Certification Markings

CE Mark	
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Electromagnetic Compatibility Notices

Europe (CE Declaration of Conformity)

This product has been tested in accordance too, and complies with the Low Voltage Directive (73/23/EEC) and EMC Directive (89/336/EEC). The product has been marked with the CE Mark to illustrate its compliance.